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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/824,507	04/14/2004	James M. Chwalek	83330WRZ	6458

7590 07/18/2007  
Mark G. Bocchetti  
Patent Legal Staff  
Eastman Kodak Company  
343 State Street  
Rochester, NY 14650-2201

EXAMINER
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MARTIN, LAURA E

ART UNIT	PAPER NUMBER
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2853

MAIL DATE	DELIVERY MODE
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07/18/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/824,507

Applicant(s)

CHWALEK ET AL.

Examiner

Laura E. Martin

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,6-12 and 42 is/are pending in the application.
- 4a) Of the above claim(s) 2-5, 13-41 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,6-12 and 42 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Objections*

Claim 42 is objected to because of the following informalities: "he" should be "the". Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 42 are rejected under 35 U.S.C. 102(e) as being anticipated by Furlani et al. (US 20030112302 A1).

### **Furlani et al. disclose the following limitations:**

As per claim 1: a fluid chamber having an orifice (figure 5, element 42); a fluid drop forming mechanism (figure 2, element 68) associated with the fluid chamber and being operable to apply fluid present in the chamber energy which is sufficient to cause a fluid drop to be ejected [0037] from the orifice; and a fluid drop steering device

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associated with the fluid chamber and being operable when fluid is within the fluid chamber (figure 2, elements 54 and 64J) to be able to apply to the fluid inside the chamber energy which is insufficient to cause drop formation to the fluid present in the fluid chamber, the drop steering device being distinct from the fluid drop forming mechanism.

As per claim 42: the fluid drop steering device is operable to be able to apply the energy to fluid inside the fluid chamber including applying the fluid energy optionally [0037].

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hawkins et al. (EP 1201435 B1).

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**Hawkins et al. disclose the following claim limitations:**

As per claim 1: a fluid drop chamber having an orifice (figure 3B, element 26); a fluid drop steering device associated with the fluid chamber (figure 3, element 44) and being operable when the fluid is within the fluid chamber (figure 3B, element 32) to be able to apply to fluid inside the fluid chamber energy (the change of pressure causes steering but not ejecting [0040-0041] which is insufficient to cause drop formation to fluid present in the fluid chamber, the fluid drop steering device being distinct from the fluid drop forming device. While Hawkins et al. do not specifically disclose a fluid drop forming mechanism associated with the fluid chamber and being operable to apply to fluid present in the fluid chamber energy which is sufficient to cause a fluid drop to be ejected from the orifice within the invention, a continuous printer is disclosed both as part of the invention [0035] and more specifically in the background information [0014]. It would have been obvious to one of ordinary skill in the art at the time of the invention that the fluid drop mechanism, separate from the steering device, taught in the background information could be used in the invention of Hawkins et al. as it is the same type of printer being disclosed.

As per claim 42: the fluid drop steering device is operable to be able to apply the energy to fluid inside the fluid chamber including applying the fluid energy optionally [0040-0041].

Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hawkins (EP 1201435 B1) in view of Anagnostopoulos et al. (US 6213595).

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**Hawkins discloses the following claim limitations:** The printhead of claim 1.

**Hawkins does not disclose the following claim limitations:**

As per claim 6: a printhead wherein the fluid drop steering device is a heater operatively associated with the fluid chamber.

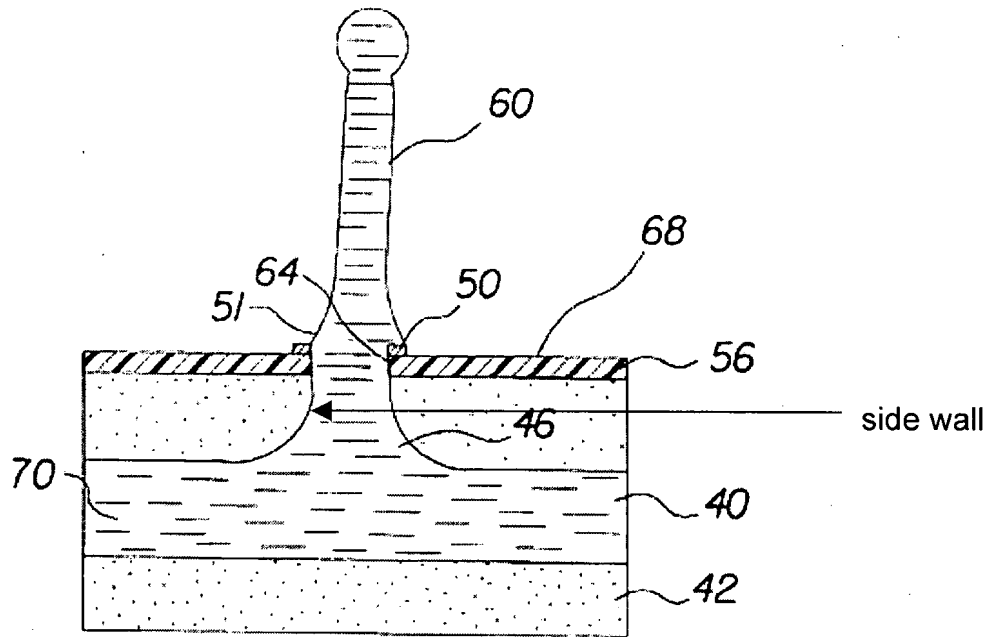
As per claim 7: a printhead the fluid chamber having a side wall, wherein the heater is formed as a portion of the side wall.

As per claim 8: a printhead wherein the heater is in electrical communication with electrical contacts located outside of the fluid chamber.

**Anagnostopoulos et al. disclose the following claim limitations:**

As per claim 6, Anagnostopoulos et al. teaches a printhead, wherein the fluid drop steering device is a heater (figure 2A, element 50) operatively associated with the fluid chamber (figure 2A, element 46).

As per claim 7, Anagnostopoulos et al. teaches a printhead, the fluid chamber having a side wall (shown below), wherein the heater is formed as a portion of the side wall (figure 2A, element 50).



As per claim 8, Anagnostopoulos et al. teaches a printhead, wherein the heater is in electrical communication with electrical contacts located outside of the fluid chamber (figure 1, element 14 and column 3, lines 40-48).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the printhead taught by Hawkins with the disclosure of Anagnostopoulos et al. in order to produce high quality images at a low cost.

Claims 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hawkins (EP 1201435 B1) and Anagnostopoulos et al. (US 6213595), and further in view of Dante et al. (US 2002/0093547).

**Hawkins discloses the following claim limitations:**

As per claim 9, Hawkins as modified teaches the printhead of claim 6.

**Anagnostopoulos et al. disclose the following claim limitations:**

As per claim 10, Anagnostopoulos et al. teaches the chamber having a side wall (shown above), wherein the heater is located adjacent to the side wall (figure 2A, element 50).

As per claim 11, Anagnostopoulos et al. teaches the heater coupled to the fluid drop forming mechanism (column 3, lines 35-47).

**Hawkins as modified do not disclose the following claim limitations:**

As per claim 9, Hawkins as modified does not teach a heater being located in the fluid chamber.

As per claim 12, Hawkins as modified does not teach an orifice being located in a nozzle plate, wherein the heater is located adjacent to the nozzle plate.

**Dante et al. disclose the following claim limitations:**

As per claim 9, Dante et al. teach a heater (figure 1, element 106) being located in the fluid chamber (figure 1, element 114).

As per claim 12, Dante et al. teach an orifice being located in a nozzle plate, wherein the heater is located adjacent to the nozzle plate (figure 1, element 108).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the printhead of Hawkins as modified with the disclosure of Dante et al. in order to create a higher quality printing apparatus in which the ink is located closer to the heater, thus being heated at a quicker rate.



Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furlani et al. (US 20030112302 A1) in view of Anagnostopoulos et al. (US 6213595).

**Furlani et al. discloses the following claim limitations:** The printhead of claim 1.

**Furlani et al. does not disclose the following claim limitations:**

As per claim 6: a printhead wherein the fluid drop steering device is a heater operatively associated with the fluid chamber.

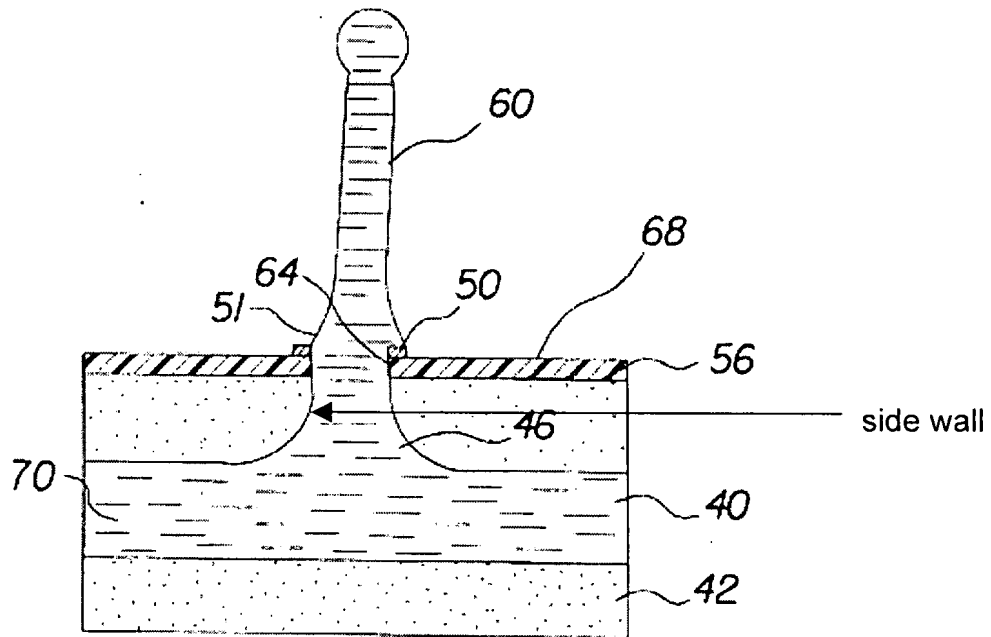
As per claim 7: a printhead the fluid chamber having a side wall, wherein the heater is formed as a portion of the side wall.

As per claim 8: a printhead wherein the heater is in electrical communication with electrical contacts located outside of the fluid chamber.

**Anagnostopoulos et al. disclose the following claim limitations:**

As per claim 6, Anagnostopoulos et al. teaches a printhead, wherein the fluid drop steering device is a heater (figure 2A, element 50) operatively associated with the fluid chamber (figure 2A, element 46).

As per claim 7, Anagnostopoulos et al. teaches a printhead, the fluid chamber having a side wall (shown below), wherein the heater is formed as a portion of the side wall (figure 2A, element 50).



As per claim 8, Anagnostopoulos et al. teaches a printhead, wherein the heater is in electrical communication with electrical contacts located outside of the fluid chamber (figure 1, element 14 and column 3, lines 40-48).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the printhead taught by Furlani et al. with the disclosure of Anagnostopoulos et al. in order to produce high quality images at a low cost.

Claims 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furlani et al. (US 20030112302 A1) and Anagnostopoulos et al. (US 6213595), and further in view of Dante et al. (US 2002/0093547).

**Furlani et al. discloses the following claim limitations:**

As per claim 9, Hawkins as modified teaches the printhead of claim 6.

**Anagnostopoulos et al. disclose the following claim limitations:**

As per claim 10, Anagnostopoulos et al. teaches the chamber having a side wall (shown above), wherein the heater is located adjacent to the side wall (figure 2A, element 50).

As per claim 11, Anagnostopoulos et al. teaches the heater coupled to the fluid drop forming mechanism (column 3, lines 35-47).

**Furlani et al. as modified do not disclose the following claim limitations:**

As per claim 9, Hawkins as modified does not teach a heater being located in the fluid chamber.

As per claim 12, Hawkins as modified does not teach an orifice being located in a nozzle plate, wherein the heater is located adjacent to the nozzle plate.

**Dante et al. disclose the following claim limitations:**

As per claim 9, Dante et al. teach a heater (figure 1, element 106) being located in the fluid chamber (figure 1, element 114).

As per claim 12, Dante et al. teach an orifice being located in a nozzle plate, wherein the heater is located adjacent to the nozzle plate (figure 1, element 108).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the printhead of Furlani et al. as modified with the disclosure of Dante et al. in order to create a higher quality printing apparatus in which the ink is located closer to the heater, thus being heated at a quicker rate.

***Response to Arguments***

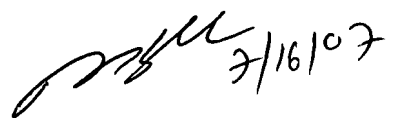
Applicant's arguments with respect to claims 1, 6-12 and 42 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura E. Martin whose telephone number is (571) 272-2160. The examiner can normally be reached on Monday - Friday, 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Laura E. Martin

  
**MANISH S. SHAH**  
**PRIMARY EXAMINER**